Periodic Monitoring Guidance

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I. Introduction

Many State and local permitting authorities have begun issuing title V operating permits. One of the most challenging aspects of this process has been the "periodic monitoring" requirement of the Environmental Protection Agency's (EPA's or Agency's) rules implementing title V, codified at title 40 of the Code of Federal Regulations (40 CFR), part 70. The issues raised have sometimes revealed significantly different interpretations of this requirement among permitting authorities, EPA, and permitted sources. On several occasions, EPA Regions have objected to permits because the periodic monitoring provisions were lacking or inadequate. It is likely that understanding of the technical aspects of implementing periodic monitoring will continue to evolve over time. However, EPA believes this is an appropriate time for issuance of guidance that addresses certain basic principles, necessary for adequate periodic monitoring.

The purpose of this guidance is to clarify certain principles to be applied when implementing the periodic monitoring requirements contained in 40 CFR, sections 70.6(a)(3) and 71.6(a)(3). Section I provides background on why and when periodic monitoring is necessary. Section II offers a description of the periodic monitoring evaluation process and clarifies important concepts like "relevant time period." Sections III and IV describe how periodic monitoring can be made enforceable through the title V permit and what level of documentation should accompany the permit record. Sections V and VI explain EPA's role in the periodic monitoring evaluation process and where the applicant, the permitting authority, or public may find more information about the process. Section VII describes the effect of this guidance.

A. Periodic Monitoring is Required by the Act and its Implementing Regulations

All title V permits must contain sufficient monitoring, including periodic monitoring, to assure compliance with the applicable requirements in the permit. Section 504 of the Clean Air Act (Act) makes it clear that each title V permit must include "conditions as are necessary to assure compliance with applicable requirements of [the Act], including the requirements of the applicable implementation plan" and "inspection, entry, monitoring, compliance certification, and reporting requirements to assure compliance with the permit terms and conditions." In addition, section 114(a) of the Act requires "enhanced monitoring" at major stationary sources, and authorizes EPA to establish periodic monitoring, record keeping, and reporting requirements at such sources. The regulations at 40 CFR,

sections 70.6(a)(3) and 71.6(a)(3), specifically note that each permit shall contain periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of record keeping designed to serve as monitoring).

It has been and continues to be the Agency's view that sources are under an obligation to comply with permit limits, State implementation plan (SIP) limits, national emissions standards for hazardous air pollutants (NESHAP), and new source performance standards (NSPS) requirements at all times. Consistent with this view of "compliance" and with our stated approach in the compliance assurance monitoring (CAM) rule (40 CFR part 64), we believe that periodic monitoring requirements in title V permits must provide a reasonable assurance of compliance over all anticipated operating conditions.[1]

One of the purposes of the periodic monitoring requirement is to collect and record information that can be used by the source, in conjunction with any other relevant information, to assess that emission point's compliance with applicable requirements. Thus, periodic monitoring requires the actual recording and retention of information related to emissions, not just the displaying of that information at the time it is being generated.

B. Why Periodic Monitoring Is Required

The Act, through the title V program and section 114(a), places the responsibility on source owners and operators to have sufficient knowledge of their source operations to certify whether their emission units are in compliance with all

[1]This guidance interprets sections 70.6(a)(3)'s and 71.6(a)(3)'s requirement that periodic monitoring be sufficient to yield reliable data that are "representative of the source's compliance with the permit" to require the same level of compliance assurance as part 64's requirement that monitoring and monitoring data provide "reasonable assurance of compliance with emission limitations or standards for the anticipated range of operations at a pollutant-specific emissions unit." Both part 70's "representative of compliance" standard and part 64's "reasonable assurance of compliance" standard are reasonable interpretations of the Act, section 504's mandate to include monitoring to "assure compliance" with title V permit terms and conditions. In light of this, this guidance will use the terms "representative of compliance," "reasonable assurance of compliance," and "assure compliance" interchangeably. Moreover, when these terms are used, compliance shall mean continuous compliance.

applicable air pollution control requirements. Periodic monitoring can be used by source operators to quickly identify unusual periods of operation and to take the necessary corrective action. Further, data from periodic monitoring--in conjunction with other required monitoring data and other available information--provide a basis on which a responsible official for a source may certify its compliance status. Data from periodic monitoring are also important to permitting authorities and citizens for the purpose of assessing sources' compliance with applicable requirements.

C. Where Periodic Monitoring is Required

Periodic monitoring is required for each emission point at a source subject to title V of the Act that is subject to an applicable requirement, such as a Federal regulation or a SIP emission limitation. No emission units at a title V source subject to an applicable requirement, including those subject only to generic applicable requirements, are categorically exempt from the requirement that the permit contain monitoring, compliance certification, and reporting provisions to assure compliance with the permit terms and conditions.

For many emission points at most sources, monitoring already exists in current Federal or State regulations that satisfies the part 70 periodic monitoring requirement. First, all new standards proposed under the authority of section 111 NSPS and section 112 NESHAP after November 15, 1990 are presumed to have adequate monitoring to meet the periodic monitoring requirement for those standards. Second, for emission units at major sources that are subject to Federal or SIP emission limitations, or standards for which the Federal standard specifies a continuous compliance determination method,[2] the existing monitoring used to determine continuous compliance is sufficient to meet the title V monitoring requirements [see 62 FR 54899, 40 CFR section 64.1, and 40 CFR section 64.2(b)(1)(vi)]. Third, for emission units subject to the acid rain requirements pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act, EPA has determined that these regulations contain sufficient monitoring for the acid rain requirements. Therefore, permits incorporating monitoring in the Federal regulations for units subject to any of the above

[2]A continuous compliance determination method means a method specified by the applicable standard which: (1) is used to determine compliance with an emission limitation or standard on a continuous basis, consistent with the averaging period established for the emission limitation or standard; and (2) provides data either in units of the standard or correlated directly with the compliance limit.

identified applicable requirements will not need any additional monitoring for these standards.

In addition, on October 22, 1997, EPA promulgated the CAM rule, 40 CFR part 64, which addresses monitoring for certain emission units at major sources. The CAM rule, which applies only to emission units with active control devices whose potential pre-control device emissions are at or above the major source thresholds, requires the title V permit for these sources to contain monitoring sufficient to give a "reasonable assurance of compliance" with applicable standards for the units subject to CAM. Thus, emission units with an approved CAM plan will have sufficient monitoring to satisfy the periodic monitoring requirement under title V and part 70. In other words, although units subject to part 64 are also subject to part 70's periodic monitoring requirement, an adequate CAM plan will also satisfy the periodic monitoring requirements of part 70 for those emission units covered by the CAM plan.

The CAM rule generally will not require implementation of its requirements for most units subject to CAM until the first round of title V permit renewals, which will generally be 5 years after initial permit issuance. Therefore, until emission units become subject to the requirements of part 64, the initial title V permit for major sources with units subject to Federal or SIP regulations will need to include periodic monitoring for these CAM units. The most obvious periodic monitoring for these units in this interim period before permit renewal would be to begin to establish monitoring based on CAM principles as the units' method of complying with part 70's monitoring requirements. These units, however, may also use periodic monitoring that is not based on CAM principles as periodic monitoring, but only until 40 CFR part 64 becomes applicable to the unit and only to the extent that the monitoring reasonably assures compliance.

If an emission unit does not fall within one of the general categories identified in the previous three paragraphs, periodic monitoring is required when the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit. Clearly, when an applicable requirement imposes a one-time testing requirement, periodic monitoring is not satisfied, and so additional monitoring must be required consistent with sections 70.6(a)(3) or 71.6(a)(3). In addition, additional periodic monitoring may be necessary in cases where some monitoring exists in an applicable requirement, but such monitoring does not provide the necessary assurance of compliance. Further, if an applicable requirement lacks

monitoring or testing, periodic monitoring is not satisfied unless the unit is an insignificant emissions unit (IEU) for which no additional monitoring may be necessary, as discussed in section II.F below.

In light of the general categories above for which periodic monitoring requirements are already satisfied, emission units subject to pre-1990 NSPS and NESHAP regulations and emissions units subject to specific SIP standards or permit terms created under SIP-approved programs should be examined for determining whether the applicable requirement's existing monitoring is sufficient to assure compliance or whether additional monitoring is necessary to satisfy part 70's periodic monitoring requirement.

II. The Periodic Monitoring Evaluation Process

Periodic monitoring must be adequate to provide a reasonable assurance of compliance with requirements applicable to the source and with all permit terms and conditions over the anticipated range of operation. As described above, periodic monitoring must be evaluated and established as appropriate for each applicable requirement for which the present monitoring is nonexistent or otherwise inadequate. In many cases, this will require a case-by-case, unit-by-unit, pollutant-by-pollutant analysis to devise an adequate monitoring scheme. However, in other cases, it may be appropriate to simply evaluate periodic monitoring for a "like" class of emission units and applicable requirements. Monitoring for "like" situations is described further in section II.F below.

The periodic monitoring process should begin by evaluating whether monitoring, including record keeping, reporting, or periodic testing, applies to the emissions unit in question under existing applicable requirements for that unit. If the already-required monitoring is sufficient to yield reliable data from the relevant time period and is representative of the source's compliance with a particular applicable requirement, then no further monitoring––for that applicable requirement at that emission unit––is required in the permit. If additional monitoring is required, then the permitting authority should consider all of the relevant factors listed below, as well as other factors that may apply on a case-by-case basis, in order to arrive at the appropriate periodic monitoring methodology.

Those factors include:

- The likelihood of violating the applicable requirement (i.e., margin of compliance with the applicable requirement);

- Whether add-on controls are necessary for the unit to meet the emission limit;

- The variability of emissions from the unit over time;

- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;

- The technical and economic considerations associated with the range of possible monitoring methods; and

- The kind of monitoring found on similar emission units.

While EPA does not plan to specify any particular protocol in implementing periodic monitoring, the preceding factors provide an outline of how to analyze what is appropriate periodic monitoring for an emission unit with a particular applicable standard. The process is informed at each step by the underlying purpose of periodic monitoring, to provide a reasonable assurance of compliance with the applicable requirement for the anticipated range of operations.

In all cases, the rationale for the selected periodic monitoring method must be clear and documented in the permit record. In many cases, the effectiveness of the periodic monitoring technique will be obvious--as in the case of continuous emissions monitoring--and will require little additional documentation in the administrative record. At other times, a technical justification may be necessary in the permit record. Overall, it is important for permitting authorities to properly document the permit record for reference in future title V permitting actions.

Examples of how these and other factors should be considered in the periodic monitoring selection process are described throughout the remainder of the guidance. In particular, Sections II.B through II.F discuss many of the different types of activities that can constitute periodic monitoring for different applicable requirements. The discussion of these different monitoring options should not suggest, however, that there is a hierarchy to deciding what periodic monitoring is appropriate.

A. The Relevant Time Period for Periodic Monitoring

For the purposes of this guidance, "relevant time period" from 40 CFR section 70.6(a)(3) and 40 CFR section 71.6(a)(3) is clarified to mean "*the averaging period of the applicable requirement.*" The "relevant time period" is not to be confused with the semi-annual reporting and annual compliance certification cycles also found in parts 70 and 71. For example, the relevant time period for many opacity requirements is 6 minutes. If an applicable requirement measures compliance with an SO_2 emission limit pursuant to a rolling 30-day average, then the relevant time period is a rolling 30-day period. In some cases, the applicable requirement may not expressly state an averaging time. For example, 40 CFR part 60,subpart O limits particulate matter to 0.65 g/kg of dry sludge. However, the standard specifies that Method 5 shall be used and specifies the sampling time and volume for each run. In this example, the relevant time period would be the cumulative sampling time needed to perform the Method 5 test (e.g., 3 hours representing the cumulative sampling time of three 1-hour runs). In some cases the relevant time period is instantaneous. For example, if a work practice standard requires a lid to be free of holes or cracks, a violation exists if the lid has a hole or crack for any amount of time.

However, it is important to note that the duration of periodic monitoring, in many instances, will not match the relevant time period of the applicable requirement. Instead, the duration of the monitoring simply needs to allow the results of the monitoring to relate to, that is, to provide an assurance of compliance during, the relevant time period. In this way, the requirement that periodic monitoring data be from the "relevant time period" is closely related to the requirement that the data be "representative of compliance." Data are "representative of compliance" if they allow for a reasonably supportable conclusion regarding the compliance status during each relevant time period.

For example, suppose that a boiler is subject to an SO_2 limit with a 1-hour averaging time and the source is using a low sulfur oil that would assure compliance with the limit. The periodic monitoring might consist of testing the oil purchased by the source. In this example, although the "relevant time period" is one-hour, it is obvious that neither the sampling nor analysis of the oil must occur for the full hour. Instead, it is clear that the results of an analysis of the sulfur content of a representative oil sample relate to the 1-hour averaging period of the limit for that fuel shipment, provided that the sulfur content is consistent.

Furthermore, periodic monitoring does not require that every "relevant time period" be monitored. Instead, the frequency of the monitoring would be determined during the periodic monitoring evaluation process. Take the example of a flare that is subject to the requirements of 40 CFR section 60.18. The design requirements at section 60.18(c)(1) require that the flare be designed for and operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Compliance is determined by using Reference Method 22 with an observation period of 2 hours. Performing a Method 22 for every 2-hour period is neither practical nor necessary.

B. Use of Existing Continuous Emissions Monitors

Several Federal rules, including certain NSPS and NESHAP subparts and Acid Deposition Control, already require source operators to install, maintain, operate, and quality assure continuous monitoring devices to directly measure emissions. Similarly, many SIPs and construction permits require such devices. Where the source has already installed a continuous emission monitoring system (CEMS), a predictive emission monitoring system (PEMS), or a continuous opacity monitoring system (COMS), such systems will be the periodic monitoring method except in highly unusual circumstances.

For example, most coal fired utility boilers are required to install, operate, maintain, and quality assure SO_2, NO_x, and CO_2 flow, and opacity monitoring equipment under the acid rain program. These monitoring systems are to be operated during all periods of operation, including periods of startup, shutdown, and malfunction, and during times when alternative fuels may be combusted. In these cases, the existing monitoring systems are to be specified as the periodic monitoring method for applicable requirements under the SIP and other requirements such as the NSPS. In nearly all cases, data from these monitoring systems provide the fundamental building blocks for determining compliance with different emissions limits and averaging times, at little or no additional cost. Further, since the acid rain program requires these monitoring systems to be operated at all times, including periods of time when the unit is combusting alternative fuels, the monitoring systems provide useful information that the source may use to verify compliance with the standards.

While it may be technically possible to craft different monitoring scenarios for each different operating condition, the permitting authority should strive to minimize confusion where possible. For example, even though opacity and SO_2 emissions

will likely never exceed the corresponding emission limitations when a coal-fired utility unit fires natural gas during periods of startup, shutdown, malfunction, or coal curtailment, data on opacity and SO_2 emissions should still be supplied during those periods using the COMS and SO_2 CEMS. The use of a single, standardized monitoring methodology allows the source, State and local agencies, EPA, and the general public to evaluate one set of compliance data.

C. When Existing Testing or Monitoring is Inadequate

Part 70 requires an evaluation of a permit's applicable requirements to determine whether monitoring in these requirements meets the periodic monitoring criteria and is, therefore, adequate to provide a reasonable assurance of compliance with the applicable requirement over the anticipated range of operations. Whether existing monitoring is adequate, therefore, must be judged according to the periodic monitoring criteria, namely whether the monitoring yields reliable data from the relevant time period that are representative of the source's compliance with the applicable requirement. A different interpretation would lead to the anomalous and unacceptable result that an applicable requirement that lacked monitoring altogether would be supplemented to a greater degree in the title V permit than an applicable requirement with monitoring that is minimal and inadequate.

In general, existing testing or monitoring is inadequate if the data are not reliable, if the data collection frequency is not specified, or if the data collected are not representative of the emission unit's compliance performance. Where the applicable requirement does not contain adequate monitoring, reporting, or record keeping to provide a reasonable assurance of compliance for the anticipated range of operations, periodic monitoring must be added to fulfill the requirements of 40 CFR sections 70.6 and 71.6.

While reference method tests and emission factors all play an important role in the air pollution control program, none of these methods constitutes periodic monitoring unless it provides reliable information at a frequency sufficient to provide a reasonable assurance of compliance with the applicable requirement. For example, a once-a-year stack test is not sufficient to assure compliance with a 3-hour emission limitation unless the source can provide additional parametric data to provide a reasonable assurance of compliance with the standard. Likewise, while AP-42 or other emission factors are helpful for estimating emission levels, they are generally not appropriate for determining compliance with an applicable requirement unless

the factor has either been developed directly from the emission unit in question or substitutes for a proven mass-balance relationship. Further, monthly fuel sampling and analysis also may not be adequate for short-term emission limits where the fuel composition varies. In the event the permitting authority determines that shorter-term monitoring is technically infeasible or cost prohibitive, a less frequent sampling frequency may be established as long as the period is sufficiently representative of the source's compliance with the emission limitations. Otherwise, additional monitoring must be used to show compliance between stack tests.

D. CEMS, PEMS, or COMS Should be Considered When Developing Periodic Monitoring

The permitting authority should give consideration to requiring installation, operation, maintenance, and quality assurance of CEMS, PEMS, or COMS for vents or stacks which carry a major portion of the plant's emissions and have an applicable requirement that the emission unit is likely to exceed. In addition, any other equipment for which an NSPS establishes a CEMS, PEMS, or COMS requirement–-whether or not that equipment is subject to the NSPS–-should be considered candidates for emission monitors.[3] Note that even where CEMS, PEMS, or COMS are technically and economically feasible, other periodic monitoring may be selected consistent with the relevant factors in section II of this guidance.

E. Use of Parametric Monitoring

Parametric monitoring that provides a reasonable assurance of compliance should be considered for periodic monitoring. The CAM rule should be consulted for guidance on the type of parametric monitoring that might satisfy periodic monitoring.

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[3]For example, through its NSPS program, EPA has already determined that COMS are both technically and economically feasible for a large number of emission units, including industrial, institutional, commercial, and utility steam boilers firing other than natural gas or "clean" fuel oil; fluidized catalytic cracking units; portland cement kilns and clinker coolers; primary metal smelters; ferroalloy and steel arc furnaces; pulp mill recovery furnaces; glass melting furnaces; rotary lime kilns; and phosphate rock and other mineral dryers, calciners, and grinders. Similarly, the NSPS establish SO_2, NO_x, H_2S, and other continuous monitoring requirements for a variety of emission units. The above list is not meant to limit the source types for which monitors may be appropriate, but instead provides examples of the source types for which monitors are known to be both technically and economically feasible.

Information on parameter data that the source is already collecting and that could be used to indicate compliance should be considered.

When using parametric data to satisfy the periodic monitoring requirement, the permit should specify a range which will provide a reasonable assurance that the source is in compliance with the underlying requirement. Wherever possible, the proposed range should be supported by documentation indicating a site-specific developed relationship between parameter indicator ranges and compliance with the emission limit, although it is not required that the range be set such that an excursion from the range will prove noncompliance with the associated limit. Operational data collected during performance testing is a key element in establishing indicator ranges; however, other relevant information in establishing indicator ranges would be engineering assessments, historical data, and vendor data. The permit should also include some means of periodically verifying the continuing validity of the parameter ranges.[4]

For example, the permit may require periodic stack testing to verify direct compliance with the applicable requirement. At the same time, the test data and other engineering information could be used to set the parameter ranges that will be used to determine compliance between tests. The permit should also specify what happens when a parameter exceeds the established range. For example, the permit should specify whether excursion from the established range is considered a violation or whether it will instead trigger corrective action and/or additional monitoring or testing requirements to determine the compliance status of the source. Where documentation of a site-specific developed relationship between parametric monitoring and compliance with the emission limit is not possible because data are lacking and because generation of such data are not feasible prior to issuance of the permit, it may be necessary to include in the permit milestones, including source testing, for

[4]The discussion of parametric monitoring for compliance purposes in this document is necessarily brief. More complete discussions, including examples and illustrations, of compliance assurance monitoring principles, parametric monitoring designs, and appropriate justifications are available in the CAM rule (40 CFR part 64) and the CAM Technical Guidance Document. Both of these documents as well as other related materials are available electronically through the Emission Measurement Center site on EPA's Technology Transfer Network (www.epa.gov/ttn/emc). Responses to specific questions about the CAM rule and related material are available through the emission testing information hotline, The Source, at (919) 541-0200.

establishing such relationship. The EPA expects this will only rarely be the case.

F. Other Forms of Periodic Monitoring, Including Record Keeping and Permit Limitations

The Agency recognizes that periodic monitoring may take many forms other than the direct measurement of emissions or parametric monitoring, including record keeping and permit limitations. As stated earlier in this guidance, the conclusion about what is appropriate periodic monitoring should be reached by analyzing all relevant factors in section II of this guidance for each emission unit and each applicable requirement.

The maintenance of records, whether emission calculations, fuel content information, or some other relevant information, may be sufficient periodic monitoring for certain emission units, and applicable requirements. For example, record keeping of required work practices, pollutant content of fuel or raw material, and inspections of design or equipment specifications may satisfy periodic monitoring depending on the applicable requirements and the type of emission units.

As an example, many state rules establish particulate matter limitations based on a process-weight-rate table or formula. In cases where these limits can be met with minimal or no controls, it may be acceptable for the permitting authority to specify record keeping as adequate periodic monitoring because the likelihood that the source will exceed the emission limitation, even while operating at full load, is extremely low. In this case, retaining information on the material inputs to the process would constitute adequate periodic monitoring. Of course, if some level of control is necessary to comply with the standard, then the permit must either specify frequent measurement of particulate matter and/or collection of control equipment parameters to assure proper operation and maintenance of the control device.

Similarly, an enforceable permit limitation may constitute adequate periodic monitoring in the proper circumstances. For example, a permitting authority may conclude that the likelihood of violating an SO_2, particulate matter, or opacity emission standard for gas combustion units firing pipeline grade natural gas is virtually impossible as long as the unit is properly maintained and burns pipeline grade natural gas. Thus, appropriate periodic monitoring for this situation might consist of maintaining adequate records of fuel type and making the fuel type and the proper maintenance of the unit enforceable conditions of the permit. The EPA believes that there are many

other combinations of requirements, emission units, raw materials and fuels, in addition to the two examples above, where record keeping and/or permit restrictions would satisfy the periodic monitoring requirement.

In situations where a particular class of "like" applicable requirements associated with "like" emission units would all require the identical periodic monitoring (e.g., all natural gas fired boilers needing record keeping to provide a reasonable assurance of compliance with a 20 percent opacity standard), a permitting authority may, after adequate justification, determine the periodic monitoring for that class of units. Of course, if a particular source is found to differ from such a class due to a history of inconsistent operating conditions or difficulties in providing a reasonable assurance of compliance, for example, then class treatment may not be appropriate. Permitting authorities may opt to create a policy or other guidance document explaining the class treatment and rationale for use in all subsequent permitting actions. Any such policy should be made readily available to the public and other interested parties, including EPA.[5]

Although periodic monitoring may consist of record keeping and/or a permit limitation such as a fuel restriction, in no case will EPA accept a periodic monitoring determination based solely on the size, hours of operation, or the past compliance history of the emission unit. Operational and process flexibility, changes in ownership, fuel flexibility, age of unit, and many other factors can adversely influence a source's future compliance status, despite its past good performance. Of course, information on past compliance history is relevant to the likelihood of violating the applicable standard (one of the six factors discussed previously in this guidance) and will help inform the source and permitting agency on the appropriate monitoring to provide a reasonable assurance of compliance.

The EPA also acknowledges that there may be a small class of IEU's for which no additional monitoring may be necessary. While discussing IEU's subject to generally applicable requirements, White Paper Number 2 for Implementation of The Part 70 Operating Permits Program states that where the establishment of a regular program of monitoring would not significantly enhance the ability of the permit to assure compliance with the general applicable requirement, the permitting authority can provide that the status

[5]Although any such policy will undergo formal review by EPA only when presented in the context of a particular title V permit, advanced coordination with and review by EPA is encouraged.

quo (e.g., no monitoring) will meet the requirements of section 70.6(a)(3)(i). This is based on the belief that IEU's typically are associated with inconsequential environmental impacts and present little potential for violations of generically applicable requirements.

Of course, where a potential for violation of the applicable requirement exists, the permitting authority shall consider adding monitoring requirements. For example, a small coal and natural gas-fired boiler (an IEU in some programs) may need monitoring for opacity while the unit is burning coal to provide a reasonable assurance of compliance with the SIP's opacity limit, while a large turbine that is major for NO_x and that can only burn pipeline natural gas, may not need monitoring for the SIP's opacity or SO_2 limit. It should be emphasized that whether a reasonable assurance of compliance is achieved without additional monitoring must be judged in the context of a particular emission unit, or as discussed above, a class thereof. That a unit was approved as an "insignificant activity" by EPA relates to the level of detail necessary to be included in a title V permit application and not whether compliance with any applicable requirement is assured without further monitoring. The fact that a unit is an IEU is not, by itself, a justification for no monitoring.

III. Enforceability of Periodic Monitoring Provisions

Vague or unenforceable monitoring requirements in permits are not sufficient to address the requirement for periodic monitoring. For example, statements in the permit that the source shall prepare a monitoring plan, that testing shall be performed at the request of the permitting authority, or that the permitting authority's inspectors will conduct the periodic monitoring for the source are not sufficient. Responsibility for compliance with the title V permit rests upon the source. Therefore, permit conditions that rely on a permitting agency to conduct periodic monitoring are not enforceable. While permitting authorities may conduct frequent inspections or compliance tests for certain sources as part of the permitting authorities' general compliance program, the source cannot guarantee that this practice will continue in the future, or that it will provide adequate data to assure compliance with all applicable requirements. Additionally, the source is in a better position to detect and correct changes in normal operations before they become violations.

Monitoring methods approved by the permitting authority must result in information that is enforceable as a practical matter. For example, if monitoring and recording the usage of fuel is the

method chosen by the permitting authority for determining compliance with an emission limit, the data must be collected at a frequency so as to allow a presumption of compliance on the part of the source. Permitting authorities can assure such practical enforceability by confirming that the following elements are identified in the title V permit for each monitoring approach where appropriate: the frequency of monitoring, the data averaging period used, the procedures used to check data validity, the minimum period that data must be available, the requirements for record keeping, and the requirements to provide prompt deviation and summary reports.

IV. Periodic Monitoring and the Permit Public Record

The periodic monitoring in each permit must be supported by the permit record. Discussion of the decisions the permitting authority makes related to monitoring may appear in the statement that sets forth the legal and factual basis for the draft permit required by section 70.7(a)(5) or may be documented elsewhere in the permit record, including the permit application if the permitting authority finds the periodic monitoring methodologies proposed by the source are adequate. The rationale for periodic monitoring decisions that require substantial explanation should be put in documents other than the formal title V permit. This approach allows inspectors, sources, and other interested readers to focus on the actual requirements of the permit rather than having to evaluate background materials.

V. EPA's Role

The EPA in general, and Regional Offices in particular, will continue to provide technical assistance to permitting authorities to assure that adequate monitoring exists in permits. Further, the Regions will continue to evaluate whether the public records for periodic monitoring decisions are complete and technically sound. While EPA respects the role of the permitting authority as the primary implementer of the title V permit program, the Agency has a responsibility to maintain oversight to help ensure consistency in implementing the requirements and to fulfill EPA's role in assuring compliance with applicable requirements of the Act. The Regions should work with permitting authorities to resolve any periodic monitoring deficiencies expeditiously and at an early stage. However, the Regional Offices may object to a permit that is lacking adequate periodic monitoring if no other resolution can be reached prior to the end of EPA's 45-day review period.

While periodic monitoring by nature may be very source specific, the Regional Offices have a responsibility to ensure a

level of broad consistency in how different permitting authorities implement periodic monitoring. Therefore, the Regions will continue to coordinate reviews of periodic monitoring. The EPA expects that understanding of the technical aspects of periodic monitoring will evolve. Accordingly, EPA views consistency as a goal that must be achieved over time.

The EPA's limited resources do not allow it to review all permits or all proposals for periodic monitoring. Given the Agency's constraints in reviewing all proposed permits, EPA will concentrate its efforts on periodic monitoring associated with those emission units that have uncontrolled or pre-control potential emissions equivalent to or in excess of the major source threshold for the pollutant of interest. In addition, EPA will focus on non-major units that utilize control devices, non-major emission units that involve environmental justice concerns, those units that are located in a particular area where non-major emission units significantly impact air quality or have toxic emissions that could impose significant risks to public health, those units for which the public raised significant concern during the comment period, and those units for which the proposed title V permit contains no monitoring.

VI. For More Information

Source representatives with specific questions about periodic monitoring should first contact their local or state permitting authority. If appropriate, the permitting authority may then wish to involve the Regional Office in discussions on periodic monitoring. On the whole, permitting authorities should feel free to discuss any periodic monitoring issues with their EPA Regional Office.

Those interested in periodic monitoring developments may also want to periodically visit the various EPA Headquarters and Regional Office web sites for specific details on periodic monitoring. Many regions have been working with their state and local permitting authorities to improve the process and are making objection letters and other guidance and policy documents available to the public through the Internet.

VII. Effect of This Guidance

While offering specific recommendations, this guidance is not intended to prescribe or prohibit periodic monitoring for specific applicable requirements or emissions sources. The policies set forth in this paper are intended solely as guidance, do not represent final Agency action, and cannot be relied upon

to create any rights enforceable by any party. The Agency may choose to issue more detailed, technical guidance in the future. Further, this guidance does not address and in no way affects use of periodic monitoring data under the Credible Evidence Revisions (see 62 FR 8314). Finally, nothing in this guidance is intended to limit EPA's authority and ability to object to periodic monitoring that the Agency determines to be inadequate or otherwise not in compliance with part 70.